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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,744	12/21/2001	Richard Soltero	9233-71	3700
20792	7590	01/16/2004	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			TELLER, ROY R	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			1654	

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/036,744

Applicant(s)

SOLTERO ET AL.

Examiner

Roy Teller

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-467 is/are pending in the application.
- 4a) Of the above claim(s) 54-247, 282-370, 399-445 and 459-467 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-53, 248-281, 371-398 and 446-458 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1009 2002,  
0204 2003,  
0429 2003,  
1117 2003 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This office action is in response to the communication, received 10/23/03, in which applicant elected group I (claims 1-53, 248-281, 371-398, and 446-458) with traverse. Applicant's traversal is on the basis that the claims of group I, directed to a method of synthesizing an insulin polypeptide-oligomer conjugate, should be examined with the claims of the other groups that recite formulas I-V or a C-peptide, respectively, as species of the invention. The examiner finds this argument unpersuasive because the inventions in groups I-VII have different chemical structures due to the differences in oligomers used in the polypeptide-oligomer conjugates. Each unique chemical structure is patentably distinct. Applicant further states that the examiner has not demonstrated that the requirements for claim restriction have been met. In particular, applicant states that there is no evidence provided that would show a serious burden to examine the claims together. The examiner finds this argument unpersuasive because the inventions of groups I-VII are distinct due to the different structures of each, which would require a separate search for each. The number of searches is considered an undue burden.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-53, 248-281, 371-398, and 446-458 are pending.

### ***Information Disclosure Statement***

The information disclosure statements filed 10/9/02, 2/4/03, 4/29/03, and 11/17/03 are acknowledged. A signed copy of each is attached hereto.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-53, 248-281, 371-398, and 446-458 are rejected under 35 U.S.C. 102(b) as being anticipated by Ekwuribe (USPN 6,309,633).

The instant invention is drawn to a method of synthesizing an insulin polypeptide-oligomer conjugate comprising: contacting a proinsulin polypeptide comprising an insulin polypeptide coupled to one or more peptides by peptide bond(s) capable of being cleaved to yield the insulin polypeptide with an oligomer comprising a hydrophilic moiety and a lipophilic moiety under conditions sufficient to couple the oligomer to the insulin polypeptide portion of the proinsulin polypeptide and provide a proinsulin polypeptide-oligomer conjugate; and cleaving the one or more peptides from the proinsulin polypeptide-oligomer conjugate to provide the insulin polypeptide-oligomer conjugate.

Ekwuribe teaches a drug-oligomer conjugate, wherein D is a therapeutic drug moiety, H and H' are each a hydrophilic moiety, and L is a lipophilic moiety. The therapeutic drug moiety is preferably insulin or a functional equivalent thereof, see abstract, claim 1 and claim 4.

Ekwuribe teaches various oligomers, see column 10, lines 1-3. Ekwuribe discloses synthesis of chemically modified insulin with oligomers has been accomplished, see column 29, lines 1-3.

Therefore, the reference is deemed to anticipate the instant claims above.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-53, 248-281, 371-398, and 446-458 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekwuribe (USPN 6,309,633). The reference is relied upon for reasons discussed *supra*.

Based upon the beneficial overall teachings provided by Ekwuribe with respect to synthesis of chemically modified insulin with oligomers, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the reference, especially in the absence of evidence to the contrary.

***Conclusion***

All claims are rejected.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy Teller whose telephone number is (703)305-4243. The examiner can normally be reached on Monday-Friday from 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached on (703) 306-3220. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0196.

RT  
1654  
1/6/04

RT



CHRISTOPHER R. TATE  
PRIMARY EXAMINER